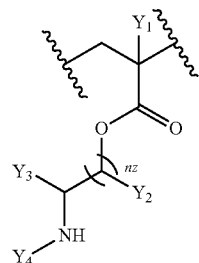


groups, or X_4' and X_5' are taken together and are alkanediyl $_{(C\leq 12)}$, alkoxydiyl $_{(C\leq 12)}$, alkylaminodiyl $_{(C\leq 12)}$, or a substituted version of any of these groups;

y is an integer from 1 to 150;

R_5 is a group of the formula:



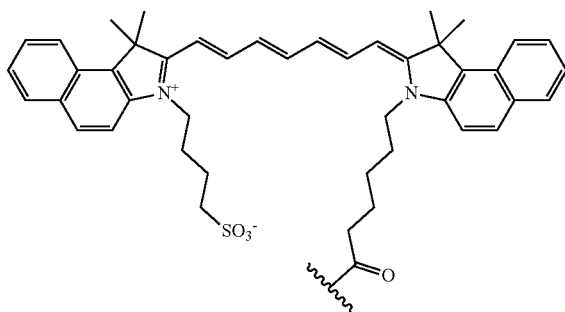
(IV)

wherein:

n_z is 1-10;

Y_1 , Y_2 , and Y_3 are each independently selected from hydrogen, alkyl $_{(C\leq 12)}$, cycloalkyl $_{(C\leq 12)}$, substituted alkyl $_{(C\leq 12)}$, or substituted cycloalkyl $_{(C\leq 12)}$; and

Y_4 is a dye with the following structure:



z is an integer from 0-6; and

R_6 is hydrogen, halo, hydroxy, alkyl $_{(C\leq 12)}$, or substituted alkyl $_{(C\leq 12)}$, wherein R_3 , R_4 , and R_5 can occur in any order within the polymer, provided that R_3 and R_4 are not the same group.

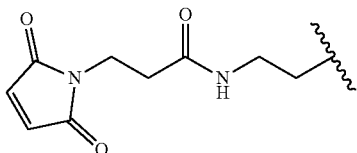
2.-3. (canceled)

4. The polymer according to claim 1, wherein R_1 is hydrogen.

5. The polymer according to claim 1, wherein R_1 is alkyl $_{(C\leq 6)}$.

6. The polymer of claim 5, wherein R_1 is methyl.

7. The polymer according to claim 1, wherein R_1 is

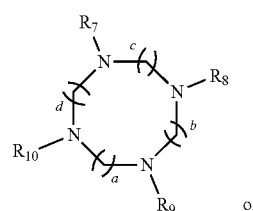


8. The polymer according to claim 1, wherein R_1 is a metal chelating group.

9. The polymer according to claim 1, wherein R_1 is a metal chelating group selected from DOTA, TETA, Diam-sar, NOTA, NETA, TACN-TM, DTPA, TRAP, NOPO, AAZTA, DATA, HBED, SHBED, BPCA, CP256, DFO, PCTA, HEHA, PEPA, or a derivative thereof.

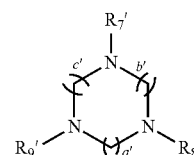
10. The polymer of claim 8, wherein the metal chelating group is a nitrogen containing macrocycle.

11. The polymer of claim 8, wherein the nitrogen containing macrocycle is a compound of the formula:



(VA)

or



(VB)

wherein:

R_7 , R_8 , R_9 , R_{10} , R_7' , R_8' , and R_9' are each independently selected from hydrogen, alkyl $_{(C\leq 12)}$, acyl $_{(C\leq 12)}$, -alkanediyl $_{(C\leq 12)}$ -acyl $_{(C\leq 12)}$, or a substituted version of any of these groups; or a linker, wherein the linker is an alkanediyl $_{(C\leq 12)}$ -C(O)NH— or a substituted alkanediyl $_{(C\leq 12)}$ -C(O)NH—;

R_7 is taken together with one of R_8 , R_9 , or R_{10} and is alkanediyl $_{(C\leq 12)}$; or

R_8 is taken together with one of R_7 , R_9 , or R_{10} and is alkanediyl $_{(C\leq 12)}$; or

R_9 is taken together with one of R_7 , R_8 , or R_{10} and is alkanediyl $_{(C\leq 12)}$; or

R_{10} is taken together with one of R_7 , R_8 , or R_9 and is alkanediyl $_{(C\leq 12)}$; or

R_7' is taken together with one of R_8' or R_9' and is alkanediyl $_{(C\leq 12)}$; or

R_8' is taken together with one of R_7' or R_9' and is alkanediyl $_{(C\leq 12)}$; or

R_9' is taken together with one of R_7' or R_8' and is alkanediyl $_{(C\leq 12)}$; and

a, b, c, d, a', b', and c' are each independently selected from 1, 2, 3, or 4.

12. The polymer of claim 11, wherein a, b, c, d, a', b', and c' are each independently selected from 2 or 3.